IN THE DRAWINGS

Applicants submit herewith on separate sheets of paper, replacement Figures 3, 4 and 6.

REMARKS

In response to the above identified Office Action, Applicants amend the application and seeks reconsideration thereof. In this response, Applicants amend claims 1, 3, 8-14, 17-20, 22, 27-28 and 30. Applicants do not cancel any claims or add any new claims. Accordingly, claims 1-30 are pending.

I.   **Objections to the Specification.**

The Examiner has objected to the title of the invention claiming that the title is not descriptive. The Applicants respectfully disagree. The invention as claimed relates to a logic circuit for processing dependency chains. Thus the title "Dependency Chain Processors" is descriptive of the invention as claimed. Applicants respectfully request the Examiner reconsider the objection to the title.

The Examiner has objected to several typos in the specification. Applicants have amended the specification as requested by the Examiner. Accordingly, reconsideration and withdrawal of the objection to the specification are requested.

II.   **Drawings**

The Examiner has objected to the drawings. Fig. 1 included reference numbers 11, 12 and 13 that were not mentioned in the specification. The Applicants have amended paragraph 25 in the specification to include these reference numbers. Accordingly reconsideration and withdrawal of the objection to Fig. 1 are requested. Applicants believe no new matter has been added to paragraph 25, only matter illustrated in Fig. 1 has been included by amendment.

The Examiner has objected to Fig. 4 and requested that the labels DC1, DC2 and DC3 be repositioned. Applicants submit herewith amended Fig. 4 with repositioned labels DC1, DC2 and DC3 as requested. Reconsideration and withdrawal of the objection to Fig. 4 are requested.

In regard to Figs. 3 and 4, the Examiner has objected to the use of the uppercase "I" in the specification where Fig. 3 uses the lower case "i". Applicants have amended Fig. 3 and Fig. 4 to utilize the uppercase "I" as well. Accordingly, reconsideration and withdrawal of the objection to Figs. 3 and 4 are requested.

The Examiner notes that Fig. 6 is not mentioned in the detailed description. Applicants have added a description of Fig. 6 in the detailed description. Applicants believe that no new matter has been presented in this added description. The additional paragraph contains only that which is already illustrated in Fig. 6. Accordingly, reconsideration and withdrawal of the objection to Fig. 6 are requested.

III.   Claim Objections

Claim 10 has been objected to for including an informality. Applicants have amended claim 10 to replace the term "creates" with "create". In claim 20 a "the" has been inserted as indicated. Similarly, a "the" has been inserted in claim 28. Accordingly, reconsideration of the objection to claims 10, 20 and 28 are requested.

IV.   Claims Rejected Under 35 U.S.C. §112

Claims 20, 22, 27, 28 and 30 have been rejected for including terms with insufficient antecedent basis. Each of these claims has been amended to remove the definite article and replace the definite article with an indefinite article where applicable. Accordingly reconsideration and withdrawal of the indefiniteness rejections of these claims are requested.

V.   Claims Rejected Under 35 U.S.C. §102

Claims 1-3, 8-12, 17-22, and 28-30 stand rejected under 35 U.S.C. §102(e) as being anticipated by U. S. Patent No. 6,260,189 issued to Batten et al. ("Batten").

In order to anticipate a claim, each element of the claim must be taught or suggested by single reference. With regard to independent claim 1, this claim as amended includes the elements of "the dependency descriptor including dependency

information for an instruction sequence and a location of the instruction sequence." The Examiner argues that the dtype field in the ccdd instruction is equivalent to a dependency descriptor. However, the dtype field includes information only about whether the instructions associated with the ccdd instruction contain a data hazard. The dtype field does not include any information regarding the location of the instruction sequence. Thus, Batten does not teach each of the elements of claim 1 as amended. Accordingly, reconsideration and withdrawal of the anticipation objection of claim 1 are requested.

In regard to claims 2, 3, 8 and 9, these claims depend from independent claim 1 and incorporate the limitations thereof. Thus, at least for the reasons mentioned above in regard to independent claim 1, these claims are not anticipated by Batten. Accordingly, reconsideration and withdrawal of the anticipation rejections of claims 2, 3, 8 and 9 are requested.

Claim 10 includes elements of "a dependency descriptor including a live-in value for an instruction sequence." As discussed above in regard to independent claim 1, the dtype field which the Examiner argues reads on the dependency descriptor contains information only about data hazards in the instructions associated with the ccdd instructions. The dtype field does not include any information related to a live-in value for the instruction sequence. The data hazards indicated by the dtype field relate to data hazards found within the instructions identified by the ccdd instructions. Thus, they do not indicate a live-in value for the instruction sequence as a whole as claimed in claim 10. Thus, Batten does not teach each of the elements of claim 10. Accordingly reconsideration and withdrawal of the anticipation objection of claim 10 are requested.

Claims 11, 12 and 17-19 depend from independent claim 10 and incorporate the limitations thereof. Thus, at least for the reasons mentioned above in regard to independent claim 10, these claims are not anticipated by Batten. Accordingly, reconsideration and withdrawal of the anticipation rejections of claims 11, 12 and 17-19 are requested.

In regard to independent claim 20, this claim includes the elements of "fetching the set of instructions at a location indicated by a dependency descriptor." Similar to the elements of independent claim 1 and the discussion related thereto, <u>Batten</u> does not teach a dependency descriptor that includes a location of a set of instructions. Rather, the dtype field of <u>Batten</u> indicates only data hazards found within the set of instructions associated with a ccdd instruction. Thus, <u>Batten</u> does not teach each of the elements of independent claim 20. Accordingly, reconsideration and the withdrawal of the anticipation rejection of independent claim 20 are requested.

Claims 21 and 22 depend from independent claim 20 and incorporate limitations thereof. Thus, at least for the reasons mentioned above in regard to independent claim 20 these claims are not anticipated by Batten. Accordingly, reconsideration and withdrawal of the anticipation rejection of claims 21 and 22 are requested.

In regard to claim 28 this claim includes the elements of "storing the dependency descriptor in an issue window to await assignment to an execution unit." Examiner has not indicated and Applicants have been unable to discern any part of <u>Batten</u> that teach the storing of dependency descriptor in an *issue window*. Thus <u>Batten</u> does not teach each of the elements of independent claim 28. Accordingly, reconsideration and withdrawal of the anticipation rejection of independent claim 28 are requested.

In regard to claims 29 and 30 these claims depend from independent claim 28 and incorporate limitations thereof. Thus, at least for the reasons mentioned above in regard to independent claim 28 <u>Batten</u> does not teach each of the elements of claims 29 and 30. Accordingly, reconsideration and the withdrawal of the anticipation rejection of dependent claims 29 and 30 are requested.

VI.   Claims Rejected Under 35 U.S.C. §103

Claims 4, 5, 13 And 14 have been rejected under 35 U.S.C. §103 as being unpatentable over <u>Batten</u>.

To establish a *prima facie* case of obviousness, the Examiner must show that the cited reference teaches or suggests each of the elements of the claim. In regard to claims 4 and 5, these claims depend from independent claim 1 and incorporate limitations thereof. Specifically, claims 4 and 5 include the elements of "the dependency descriptor including dependency information for an instruction sequence and a location of the instruction sequence." As set forth above, in regard to independent claim 1, Batten does not teach this element of claims 4 and 5. Accordingly, reconsideration and withdrawal of the obviousness rejection of claims 4 and 5 are requested.

In regard to claims 13 and 14, these claims depend from independent claim 10 and incorporate limitations thereof. Specifically claims 13 and 14 include the elements of "the dependency descriptor indicating a live-in value for an instruction sequence". As discussed above with regard to independent claim 10, Batten does not teach these elements of claims 13 and 14. Accordingly reconsideration and withdrawal of the obviousness rejection of claims 13 and 14 are requested.

Claims 6, 7, 15 and 16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Batten in view of "Beyond ILP II: SMT and Variants" by Sullery, May 2000, ("Sullery").

Claim 6 and 7 depend from independent claim 1 and incorporate the limitations thereof. Thus, Batten does not teach each of the elements of these claims. Specifically, Batten does not teach "the dependency descriptor including dependency information for an instruction sequence and a location of the instruction sequence" as discussed above in regard to independent claim 1. Further, Sullery does not cure these defects of Batten. The Examiner relies on Sullery to teach a live-in and live-out data map. Thus, Batten in view of Sullery does not teach or suggest each of the elements of claims 6 and 7. Accordingly reconsideration and withdrawal of the obviousness rejection of these claims are requested.

Claims 15 and 16 depend from independent claim 10 and incorporate the limitations thereof. Thus, at least for the reasons mentioned above in regard to

independent claim 10 these claims are not anticipated by <u>Batten</u>. Specifically, <u>Batten</u> does not teach the elements of "a dependency descriptor indicating a live-in value for an instruction sequence." As mentioned above in regard to dependent claims 6 and 7, <u>Sullery</u> is relied upon to teach a live-in and a live-out data map. Thus, <u>Batten</u> in view of <u>Sullery</u> does not teach or suggest each of the elements of claims 15 and 16. Accordingly reconsideration and withdrawal of the obviousness rejection of these claims are requested.

Claims 23 and 24 stand rejected under 35 U.S.C. § 103 as being unpatentable over <u>Batten</u> in further view of U.S. Patent No. 6,427,204 issued to Arimilli et al. ("<u>Arimilli</u>"). Claims 25 and 26 stand rejected under 35 U.S.C. § 103 as being unpatentable over <u>Batten</u> in view of <u>Arimilli</u> in further view of U.S. Patent No. 6,018,798 issued to Witt et al ("<u>Witt</u>").

Claims 23-26 depend from independent claim 20 and incorporate the limitations thereof. Thus, for the reasons mentioned above in regard to the anticipation rejection of claim 20, <u>Batten</u> does not teach each of the elements of these claims. Specifically, <u>Batten</u> does not teach "fetching the set of instructions at a location indicated by the dependency descriptor." Neither <u>Arimilli</u> nor <u>Witt</u> cures this defect of <u>Batten</u>. Thus, <u>Batten</u> in view of <u>Arimilli</u> and <u>Witt</u> does not teach or suggest each of the elements of claims 23-26. Accordingly reconsideration and withdrawal of the obviousness rejection of these claims are requested.

Claim 27 stands rejected under 35 U.S.C. § 103 as being unpatentable over <u>Batten</u> in view of "A Trace Cache Microarchitecture and Evaluation" by Rotenberg et al. ("Rotenberg") 1998.

Claim 27 depends from independent claim 20 and incorporates the limitations thereof. Thus, at least for the reasons mentioned above in regard to independent claim 20, <u>Batten</u> does not teach each of the elements of claim 27. Specifically, Batten does not teach "fetching the set of instructions at a location indicated by the dependency descriptor." <u>Rotenberg</u> does not cure the defects of <u>Batten</u>. The Examiner has not relied

on <u>Rotenberg</u> to teach these elements of the claim. Thus, <u>Batten</u> in view of <u>Rotenberg</u> does not teach or suggest each of the elements of claim 27. Accordingly, reconsideration and withdrawal of the obviousness rejection of claim 27 are requested.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely 1-30 patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,
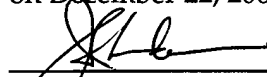
BLAKELY, SOKOLOFF, TAYLOR, & ZAFMAN LLP

Dated: <u>December 22, 2004</u>   By: _____

Jonathan S. Miller, Reg. No. 48,534

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025
(310) 207-3800

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail with sufficient postage in an envelope addressed to: Mail Stop Amendments, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia 22313-1450 on December 22, 2004.

_____

Jean Svoboda